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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/816,202	03/31/2004	Ajay Pratap Singh Kushwah	LEGAP024	7502
57255 7590 07/21/2009 VAN PELT, YI & JAMES LLP AND EMC CORPORATION 10050 N. FOOTHILL BLVD. SUITE 200 CUPERTINO, CA 95014				
EXAMINER				
ORTIZ, BELIX M				
ART UNIT		PAPER NUMBER		
2164				
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07/21/2009		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/816,202

Applicant(s)

KUSHWAH ET AL.

Examiner

BELIX M. ORTIZ

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 June 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4, 6, 8, 10, 13, 14 and 17-28 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4, 6, 8, 10, 13, 14 and 17-28 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 August 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Remarks

1. In response to communications files on 22-June-2009. Claims 1, 10, and 20-21 are amended; claims 5, 7, 9, 11-12, and 15-16 are cancelled and claims 23-38 are added by applicant's request. Therefore, claims 1-4, 6, 8, 10, 13-14, and 17-28 are presently pending in the application.

Continued Examination Under 37 CFR 1.114

2. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 06/22/2009 has been entered.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-4, 6, 8, 10, 13-14, and 17-28 are rejected under 35 U.S.C. 103(a) (Eff. Filing date of application: 10/29/2002) as being unpatentable over St. Pierre et al. (U.S. Pub. 2005/0187992) (hereinafter Pierre) (Eff. Filing date of application: 6/30/1998)

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in view of Godwin (US Pat. 5,313,604) (Eff. filing date of application: 11/13/1990)
further in view of Krishnamurthy (US Pub. 2003/0065901) (Eff. filing date of
application: 10/2/2001).

As to claims 1 and 21, Pierre teaches a computer-implemented method for
identifying a file system element for restoration (see fig. 9 and col. 5, lines 32-45)
comprising:

receiving a request to restore a file system element (see col. 13, lines 16-21);
using the determines offset to retrieve the record from the collection of records on
a storage device (see fig. 9; col. 6, lines 37-31; and col. 20, lines 53-60); and
restoring the file system element by accessing the data blocks that comprise the
file system element from storage at the one or more identifies locations (see 12, lines 34-
42).

Pierre does not expressly teach determining an offset, from a beginning of a
collection of records, indicating where a record associated with the file system element is
located within the collection of records, wherein the record includes metadata that
identifies one or more locations of data block on storage that comprise the file system
element.

Godwin teaches method for locating data in a memory backup device (see
abstract), in which he teaches determining an offset, from a beginning of a collection of
records, indicating where a record associated with the file system element is located
within the collection of records (see abstract; col. 4, lines 7-13; and col. 5, lines 18-40).

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Pierre by the teaching of Godwin, because determining an offset, from a beginning of a collection of records, indicating where a record associated with the file system element is located within the collection of records, would enable the method because, "Additionally, offsets are specified in labels to indicate the distance from the beginning of the first record to any item of data" (see abstract).

"Once the file has been designated, the method automatically calculates an estimated location using the initial compression rate estimate. To do this the method reads the identification index, ascertains the offset for the desired file, and then calculates an estimated location. As an example, if data XYZ is designated, the offset of such data can be either looked up in the identification index or derived by summing the sizes of all prior data. If, for instance, the offset is calculated to be 200 KBytes, the initial compression rate estimate of 50% would be applied to estimate that the desired data would be located at an offset of 100 KBytes into the magnetic tape medium. Since records (2) are of fixed size, for instance 40 KBytes each, it can then be estimated that the desired data might exist two and one-half records into the tape" (see col. 5).

Krishnamurthy teaches system for converting metadata about data snapshots (see abstract), in which he teaches wherein the record includes metadata that identifies one or more locations of data block on storage that comprise the file system element (see claim 1 and p. 36-37).

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Pierre by the teaching of Krishnamurthy, because “Node N1 represents metadata about a storage area having an offset in disk space of 1200 data blocks and an extent of 1848 data blocks which has not yet been overwritten. Node N2 represents metadata about a storage area having an offset in disk space of 3248 data blocks and an extent of 1,024,000 data blocks which is not yet subject to an overwrite, indicative of large areas which have not been overwritten during early stages. Further, node N3 represents metadata about a storage area having an offset of 600 data blocks and an extent of 128 data blocks which have not yet been copied over.

FIG. 4B represents the topology of metadata nodes of FIG. 4A as modified by a write operation to the source drive at an offset of 1400, with an extent of 64 data blocks. The node N1 at an offset of 1200 now has an extent of 200 data blocks”, (see p. 36-37).

As to claim 2, Pierre as modified teaches the method further comprising determining the type of file system element being restored (see Pierre fig. 9, character 98A and 98B).

As to claim 3, Pierre as modified teaches wherein a most significant bit indicates the type of file system element being restored (see Pierre fig. 2B and 13 and col. 3, lines 61-65).

As to claim 4, Pierre as modified teaches wherein the most significant bit is stored in a table (see Pierre fig. 2B and 13).

As to claim 6, Pierre as modified teaches wherein a file metadata file includes a collection of records for file system objects that are files (see Pierre col. 10, lines 56-58).

As to claim 8, Pierre as modified teaches wherein a directory metadata file includes a collection of records for file system objects that are files (see Pierre col. 10, lines 56-58 and col. 1, lines 39-42) .

As to claim 10, Pierre as modified teaches wherein the metadata further includes at least one of the following: administrative information, permissions or a value that uniquely identifies the file system element associated with the file system element (see Pierre, fig. 11; col. 9, lines 63-65; col. 20, lines 37-44; and col. 11, line 40).

As to claim 13, Pierre as modified teaches wherein the record id a first recode and determining an offset includes retrieving a second record associated with the file system element being restored the includes the offset of the first record (see Pierre fig. 9).

As to claim 14, Pierre as modified teaches wherein the offset is stored in a table (see Pierre figure 13).

As to claim 17, Pierre as modified teaches the method further comprising determining a second offset of a second record associated with the record (see Pierre figure 13).

As to claim 18, Pierre as modified teaches wherein the association of the record with the file system element occurs via an inode (see Pierre col. 25-29 and col. 1, lines 41-46).

As to claim 19, Pierre as modified teaches wherein the association of the record with the file system element occurs via a value that uniquely identifies the file system element (see Pierre figure 11).

As to claim 20, Pierre teaches a system for identifying a file system element for restoration comprising:

a processor configured to:

receiving a request to restore a file system element (see Pierre, col. 13, lines 16-21);

determining an offset, from a beginning of a collection of records, indicating where a record associated with the file system element is located within the collection of records (see Godwin, abstract; col. 4, lines 7-13; and col. 5, lines 18-40) wherein the

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record includes metadata that identifies one or more locations of data block on storage that comprise the file system element (see Krishnamurthy, claim 1 and p. 36-37)

use the determined offset to retrieve the record from the collection of records (see Pierre, fig. 9; and col. 20, lines 53-60); and

restoring the file system element by accessing the data blocks that comprise the file system element from storage at the one or more identifies locations (see Pierre, 12, lines 34-42); and

a storage device on which the collection of record is stored (see Pierre, col. 3, lines 25-32 and col. 6, lines 27-31).

As to claim 22, Pierre as modified teaches wherein the record has a variable length (see Pierre fig. 13, character 135).

As to claim 23, 24, and 25, Pierre as modified teaches wherein:

receiving the request includes receiving a path, which includes a root, to the file system element within a file system (see Krishnamurthy, fig 4A, N1); and

determining the offset includes:

accessing a root record associated with the root (see Krishnamurthy, fig 4A and 4B); and

in the event there is a next path element in the path after the root, determining from the accessed root record an inode number of the next path element (see Krishnamurthy, fig 4A and 4B, N2, N4, N3).

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As to claim 26, 27, and 28, Pierre as modified teaches the method further comprising determining a type of file system element being restored, wherein in the event the file system element is a directory: the components of the file system element include one or more children of the directory, the record identifies the children of the directory, and restoring the file system element includes adding the children of the directory identified by the record to a list of file system elements to be restored (see Pierre, col. 1, lines 39-42 and col. 1, lines 56-59)

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Belix M. Ortiz whose telephone number is 571-272-4081. The examiner can normally be reached on monday-friday 9am-5pm.

The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/B M O/

Examiner of Art Unit 2164

July 16, 2009

/Charles Rones/

Supervisory Patent Examiner, Art Unit 2164